Meeting Summary

Day 1: July 9, 2012

1. Welcome and Introductions

The meeting was called to order at 9:02 a.m., July 9, 2012, by the Chair of the Delta Independent Science Board (ISB or the Board), Dr. Richard Norgaard. Six members of the Board were present: Brian Atwater, Elizabeth Canuel, Tracy Collier, Richard Norgaard, Vince Resh, and John Wiens. Two members were absent: Judy Meyer and Jeffrey Mount. One member, Edward Houde, participated via telephone as a member of the public.

None of the Delta ISB members made any new disclosures.

Delta Science Program (DSP) Staff in attendance: Peter Goodwin, Lauren Hastings, Marina Brand, and Joanne Vinton.

2. Delta ISB Chair's Report – Dick Norgaard

At its June teleconference, the Board approved a memo to Jerry Meral, Deputy Secretary, California Natural Resources Agency, and Dale Hoffman-Floerke, Deputy Director, Delta and Statewide Water Management, California Department of Water Resources, titled "Initial Recommendations for Integrating BDCP Science and for Improving the Reviewability of Draft BDCP Documents." The Board has not yet received a reply to the memo, but did receive a reply to the cover letter, which stated that Meral and Hoffman-Floerke plan to respond to the memo. Norgaard also reported that their letter to the Delta Stewardship Council (Council) on the sixth staff draft of the Delta Plan was not well received by some who worked hard on the draft due to the tone of the letter. Norgaard was able to allay those concerns and interact with Council members on the Board's review and comments at the Council's June meeting.

3. Lead Scientist's Report – Peter Goodwin

The application period for the Delta Science Fellows program is closed. The review panel to evaluate the Fellows applications will meet the week of July 16. Goodwin expects that 10 to 12 Fellows may be funded. The U.S. Fish and Wildlife Service (USFWS) might fund additional Fellows if their proposed research topics address USFWS needs.

Several research studies were undertaken to gather information on the effects of salinity in the Delta and its effect on habitat. The studies are synthesized in a report titled "Synthesis of Studies in the Fall Low Salinity Zone of the San Francisco Estuary, September-December 2011." The DSP is convening a panel of independent scientists on July 31 - August 1, 2012 to review the draft report.

Goodwin and the Delta Science Program (DSP) staff continue to work on their Strategic Plan, and will request that the Board review it.

The State Water Resources Control Board has started a comprehensive review of the Bay-Delta plan, which includes three workshops on Ecosystem Changes and the Low Salinity Zone, Bay-Delta Fishery Resources, and Analytical Tools for Evaluating Water Supply, Hydrodynamic and Hydropower Effects. The DSP is facilitating these workshops by convening independent panels of local experts who will present summaries of the state of the science.

The UC Davis Center for Aquatic Biology and Aquaculture (CABA) convenes seminars, sponsored by DSP, on research topics related to science in the Delta. The next seminar will be

in mid-November and will be about natural flow regimes. Atwater suggested that the seminars have a broader audience. Goodwin stated that the current budget is too small and suggested that if other universities could share costs, then the seminars could be offered at additional locations.

The 7th Biennial Bay-Delta Science Conference 2012, which is a forum for presenting technical analyses and results from research in the Bay-Delta system, is being held October 16-18, 2012 at the Sacramento Convention Center.

The National Research Council issued a report on the future of American research universities. The report includes a table of the top 50 universities in the world, and shows that 10 of those universities are in California.

4. Delta Stewardship Council Chair Report and Executive Officer Report – Phil Isenberg and Joe Grindstaff

The Council is continuing to work on the Delta Plan. Three big policy issues remain: reducing reliance on the Delta, reducing risk in the Delta (this issue includes levees), and planning for legacy communities in the Delta, especially Bethel Island. When the Council approves the draft Plan, it and the Draft Environmental Impact Report (EIR) will be recirculated. Currently, it is anticipated that the Council will adopt the final version of the Plan and certify the Final EIR sometime in November-December 2012.

The $11.1 billion water bond ballot measure will be delayed until 2014.

The Draft Bay Delta Conservation Plan (BDCP) Environmental Impact Report/ Environmental Impact Statement is scheduled to be released for public review in September, but remaining hurdles include: defining adaptive limits for water operations, financing, and finishing the effects analysis for covered species.

5. Discuss Science Programs in the Delta that Support Adaptive Management

In October 2011, DSP staff created a draft list of science programs in the Delta and sent questionnaires to the program managers to learn more about their programs. Brand wrote a summary of the questionnaires, and Hastings grouped the programs into the following categories:

- Science / Monitoring
- Water Supply and Ecosystem Restoration
- Flood Protection / Levees
- Water Quality

Many programs are connected or overlap, but have different roles, such as developing and enforcing regulations (for example, State Water Resources Control Board) or providing information through research (for example, San Francisco Estuary Institute). Board members proposed that they review related programs together. For example, the BDCP will have regulatory, research and monitoring, and implementation components that could be reviewed together. Grouping programs would help the Board determine if research programs are meeting the needs of programs that use the results of the research. The Board asked DSP for additional help to group the programs according to chapters of the Delta Plan and to develop a “pathway” document to show commonalities of topics/needs, linkages and nodes. There was also discussion about the Delta ISB brainstorming the pathway document rather than having DSP prepare it and an interest in hearing from the agencies about how the agencies view themselves.

Board members agreed they will attend the 7th Biennial Bay-Delta Science Conference to learn more about science programs in the Delta. Members will attend different sessions to ensure that all sessions are covered.

Public Comment
Burt Wilson, Public Water News Service—Wilson said that the public perception of the coequal goals (providing a more reliable water supply and protecting, restoring, and enhancing the Delta ecosystem) is that the goals will proceed concurrently. However, habitat restoration might happen later than construction of a canal or tunnel. Wilson asked how, in this situation, can adaptive management be applied? Is there anything to manage?

Dr. Valerie Connor, State and Federal Contractors Water Agency—Connor said that different people will have different ideas about how programs should be grouped. She suggested grouping by big scientific uncertainties, such as tidal restoration, flow needed in the spring, the pelagic organism decline, and the role of contaminants and invasive species. She also said that within agencies, research programs are directed specifically to the needs of the agency.

6. Discuss Reviews of other Science Programs – Richard Norgaard, Peter Goodwin

Norgaard wants the Board's reviews of science programs to contribute to the development of the Delta Science Plan. During the reviews, Board members discussed asking program managers for ideas about the Plan. A possible difficulty is that the Plan will need to facilitate research that answers big questions, but the science programs are set up to answer specific questions important to the agency.

The Board wants to learn as much as possible from the early reviews. Goodwin suggested starting with reviews of programs that the Board is already acquainted with. He recommended listing the outcomes that the Board wants, then developing a process to achieve the outcomes. Goodwin provided two documents for the Board:

- The NSF (National Science Foundation) and ERC (Engineering Research Centers) Interface
- Half-Term Review Panel Terms of Reference

The Board might not be able to adopt a universal review process because each science program might be too distinctive. The Board considered developing a flow diagram that would show the different types of reviews the Board will do. The Board wants the tone of the reviews to be constructive.

One Board member suggested that science programs be reviewed as clusters based on Delta Plan chapters, but wondered if clustering would meet the legislative mandate. Another member suggested interviewing users of specific science programs to ask if the users are getting the information they need. The Board might also study existing review processes.

Public Comment
John Downs, Department of Fish and Game, Fish Restoration Program Agreement (FRPA)—Downs said that his group is starting to construct a monitoring program to gather baseline information for restoration projects. He asked for a contact in the DSP to work with as FRPA develops its monitoring program.

7. Develop Potential Review Processes for all Science Programs in the Delta – Elizabeth Canuel, Brian Atwater, John Wiens

Canuel, Atwater, and Wiens developed a draft document that contains a list of goals for the Board's reviews, a partial list of questions to be answered by science programs under review,

and a suggestion that DSP perform a self-assessment using the Strength, Weakness, Opportunities, and Threats method (SWOT). Canuel also emphasized the need for the Board to understand the missions of programs under review. The Board suggested adding a diagram that shows the steps of the adaptive management process, so that program managers have an understanding of what the Board means by adaptive management. Board members will send more comments to Canuel, who will incorporate them into the document.

Some programs might not have enough staff to perform self-assessments or to participate in external reviews, especially if the programs are only informally grouped into clusters. If the Board reviews clusters of programs, how would findings from individual programs be aggregated into a review of the cluster? Would clustering give individual programs enough detailed feedback to be useful to them?

The Board decided to use the word “theme” instead of “cluster” because programs falling under the same theme might not actually be working together. The Board discussed possible themes, such as those based on critical issues in the Delta or based on chapters of the Delta Plan.

Some agencies are currently working together, such as the Interagency Ecological Program (IEP) and the Long-term Operations of the CVP and SWP (formally OCAP). The Board could start its reviews with these existing groups of agencies that comprise a single program.

Universities and other organizations should possibly be included in the reviews.

The IEP lead scientist, Anke Mueller-Solger, described reviews of IEP. To access information about the reviews, click here.

8. Discuss Preparation of a Draft Memo Explaining the Board’s Plan for Reviewing Science Programs in the Delta

The Board decided to postpone this agenda item.

9. Continue Discussion of the Board’s Review of the BDCP Draft EIR/EIS

The Board members discussed their tentative assignments for reviewing the Bay Delta Conservation Plan (BDCP) Draft EIR/EIS. They also discussed a memo describing their thoughts on the Phase 2 Review Panel Report on the BDCP Effects Analysis. Particular concerns listed in the review panel report were the lack of synthesis and integration, lack of acknowledgement that restoration projects might fail, and a tendency to emphasize the benefits of actions and play down the negatives.

The Board discussed its frustration of having to review a document for a project that will be static in a changing environment and questioned if the proponents are committed to quality science and adaptive management. One Board member stated that adaptive management works in some cases but not for decisions that make an irreversible change in the environment although some of the consequences can be adaptively managed. Another member reminded the Board about previous discussions regarding phasing and that phasing might lend itself to the application of adaptive management if construction of the new conveyance is adjusted to avoid significant effects.

Board members decided to start review of specific chapters of the administrative draft of the BDCP Draft EIR/EIS (ADEIR) that are not likely to change. They will follow the model of the Review Panel Report on the BDCP Effects Analysis.

Public Comment

Erik Ringelberg, consultant to Local Agencies of the North Delta—Ringelberg said that the noise chapter in the ADEIR/EIS has good information about the effects of noise on fish. Effects of noise on marine mammals, Swainson’s hawks, and kites are not covered at all. The BDCP is a

response to problems and only addresses one set of problems. He asked the Board to look carefully at mitigation plans and potentially help revisit obvious alternatives.

10. Public Comment (For matters that were not on the agenda, but within subject matter jurisdiction of the Delta ISB.)

None were made.

3:58 p.m. – Adjourn

Day 2: July 10, 2012

1. Welcome

The meeting was called to order at 9:04 a.m., July 10, 2012, by the Chair of the Delta Independent Science Board (ISB or the Board), Dr. Richard Norgaard. Six members of the Board were present: Brian Atwater, Elizabeth Canuel, Tracy Collier, Richard Norgaard, Vince Resh, and John Wiens. Two members were absent: Judy Meyer and Jeffrey Mount. One member, Edward Houde, participated via telephone as a member of the public.

None of the Delta ISB members made any new disclosures.

Delta Science Program (DSP) Staff in attendance: Peter Goodwin, Lauren Hastings, Marina Brand, and Joanne Vinton.

2. NRC Report on Western U.S. Sea Levels – Brian Atwater

Atwater summarized the National Research Council report titled "Sea-Level Rise for the Coasts of California, Oregon, and Washington: Past, Present, and Future" (Prepublication). The report discusses:

- The components of sea level rise, globally and regionally

  Global components include ocean warming, melting land ice, and water withdrawn from aquifers that eventually reaches the ocean. Along the west coast, the amount of sea level rise will depend on melting of land ice, the amount of uplift of land caused by loss of ice, regional uplift caused by earthquakes, land subsidence caused by groundwater pumping, and other processes. Gravitational effects will influence where sea level will rise.

- Projections for sea level rise to 2100

  The report projects that, south of Cape Mendocino, sea level will rise 4-30 centimeters by 2030, 12-61 centimeters by 2050, and 42-167 centimeters by 2100.

The report concludes that land ice melting (mostly Greenland and Antarctica) and ocean warming are the main components of sea level rise. Land ice melting accounted for 65 percent of sea level rise from 1993 to 2008.

The Board suggested that some case studies be added to the Delta Plan that explain how storms, floods, and sea level rise could cause levee failures in the Delta.

3. Develop the Process for Reviewing the Delta Science Program

Goodwin said that questions the DSP needs to be able to answer are: what is DSP doing and what is the value of what DSP is doing? He suggested that the Board use the National Science Foundation (NSF) Best Practices Manual used by the Engineering Research Centers (ERC) Association. Resh is a member of an ERC and has recent experience with being reviewed using the manual, which will help the Board with its site visits. Goodwin said that the NSF review standards are considered the gold standard for the U.S., if not the world. He recommended building on those standards when reviewing science programs.

Goodwin said that reverse site visits (where the program managers being reviewed visit the reviewing panel) used by the NSF were introduced partly as a cost savings measure, but have become popular. The programs being reviewed usually have budgets of at least $20 million. Typically, a lot of data are collected before the reverse site visit. During the visit, the program managers being reviewed explain what their program does. The visits are done in a half day.

The panelists are not NSF employees, but are 12-20 experts brought in from the outside. The panelists want to know:

- What is critically important to the program?
- Is the program successful?
- What goals have not been achieved and why not?

After hearing from the program managers, the panelists meet for one hour in private to discuss what they have heard. Finally, the panelists and program managers discuss the panelists' findings.

Goodwin provided Suggestions for the Scope of the ISB Review of the Delta Science Program.

Resh described his experience with the California ERC, which was reviewed recently. First, the executive officer gave a presentation. Students prepared posters, and industrial partners attended to give presentations. Review materials were provided in advance of the meeting.

The Board's reviews probably cannot be as quick as the NSF reviews, but reverse site visits would be good. The Board's reviews might need to be more like reviews of academic departments. However, academic departments are asked to provide data that requires months of preparation, and the review panel is usually overwhelmed. The Board will need to be specific about the information that it needs, and then look carefully at it.

The Board's discussion returned to the topic of reviewing science programs (Item 7 on July 9).

The Board discussed what to review first: the DSP, the Delta Science Plan, the IEP, or a group of programs based on a theme. The DSP and the IEP might need to be reviewed as programs, and not as parts of a theme, because they are unique in some ways.

A Board member suggested that the first theme the Board considers should be non-biological because there might be fewer uncertainties. The theme that needs the most attention might be climate change because it will shape the long-term sustainability of the Delta. Understanding the effects of climate change will be fundamental to the successful implementation of the Delta Plan. Climate change might need to be paired with other topics, such as levees, flood risk, or water quality. Pairing climate change with other topics might make the themes too big, unless the Board asks only to what extent programs bring climate change into their research.

The structure of Delta science is also an important topic. The Board will review the structure or coordination among the programs in each theme. Board members discussed the idea of defining new clusters of programs when coordination would be beneficial. Reviews might also consider whether or not the science programs actually provide all of the information needed to guide policy decisions.

The Board suggested the following themes:

- Habitat restoration and climate change
- Water reliability and climate change
- Fish (foodwebs) and flows and climate change (IEP will be a big part of this theme)
- Levee security and climate change
- Delta as place

The Board decided to start with the habitat restoration and climate change theme. This theme will focus primarily on the terrestrial-aquatic interface. Agencies and organizations with habitat restoration programs include the Department of Water Resources, Ecosystem Restoration

Program, Fish Restoration Program, Bay Delta Conservation Plan and State and Federal Contractors Water Agency, Delta Conservancy, Nature Conservancy, Trust for Public Lands, and Army Corps of Engineers.

The Board might want to contact the California Landscape Conservation Cooperative, a partnership at California State University Sacramento between the U.S. Fish and Wildlife Service and the U.S. Geological Survey. This organization was created to promote integrated science, natural resource management and conservation to address impacts of climate change, and other stressors within and across ecosystems.

Board members discussed whether they should talk to program managers and/or staff. They also talked about the need for confidentiality because they will ask science users for their opinions about a program. To ensure confidentiality, Board members could conduct site visits as small teams.

After Board members visit programs in small teams, they could synthesize their findings by discussing them with the whole Board. The Board might find some issues that require inviting program managers to speak before the Board, which could have the benefit of building links between the different programs.

The Board suggested that reviews could include dinners and evening sessions with presentations. Possibly, the reviews could be conducted over two full days. The Board could also gather information about programs from the Bay Delta Science Conference.

Goodwin introduced Toon van den Heuvel, who is a Dutch graduate student and worked as an intern with the DSP for three months. His focus was on nutrients from wastewater treatment plants and their effect on fish.

Public Comment
Chris Daley, no affiliation—Daley said that climate change is a larger issue than any other being considered, such as pollution. If the Board chooses climate change as a theme, it might puzzle the public because it's a global issue. He suggested pairing it with all other topics that are specific to the Delta such as pumping, contaminants, etc.

4. Discuss the Delta ISB Work Plan through June 2013

Each Board member will review one chapter of the BDCP administrative draft EIR/EIS that is not likely to change to determine how difficult the review will be and to help them structure their review of the DEIR.

Canuel and Atwater will update the memo they wrote for Item 7 on July 9 (Develop Potential Review Processes for all Science Programs in the Delta).

Resh and Wiens will write a draft cover letter to agencies and programs that the Board will be reviewing under the habitat restoration and climate change theme. The review will consider restoration that is underway and planned.

5. Public Comment (For matters that were not on the agenda, but within subject matter jurisdiction of the Delta ISB.)

None

6. Preparation for Next Delta ISB Meeting

On July 30, the Board will continue discussion of the process for reviewing programs under the habitat restoration and climate change theme. To see the agenda, click here.

2:20 p.m. – Adjourn